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**Testimony before the House Transportation Committee on HB 5104 - Truck Speed Limits**

Mr. Chairman, members of the Committee, thanks for the opportunity to testify on this bill to raise the posted speed limit for heavy trucks on freeways. I am an automotive consultant and a member of the National Motorists Association, an organization that works for safer traffic flow on our highways.

I support this bill on several points.

First, a higher posted speed limit for trucks on freeways will tend to have little or no effect on actual travel speeds. Most 85<sup>th</sup> percentile speeds for heavy trucks were 64-68 mph and most median speeds were 60-65 mph in late 1996, per the Michigan State University College of Engineering. Recent State Police data shows the 85<sup>th</sup> percentile speed for heavy trucks at 64 mph. A higher limit will merely be closer to reality. Remember when posted limits for cars on rural freeways were raised from 65 to 70 mph in 1996 - 1997, MSU researchers found that actual 85<sup>th</sup> percentile speeds went up about one-half of one mph (0.5 mph) and median speeds went up about one mph (1.0 mph). This result was consistent with many other research studies which show that posted speed limits have little or no effect on actual highway travel speeds.

Second, the closer that posted speed limits are to the optimum 85<sup>th</sup> percentile speeds, the smoother and safer the traffic flow tends to be. Reducing differential speeds is one key to this smoother and safer traffic flow. No safety benefit accrues to setting posted speed limits below the 85<sup>th</sup> percentile speed of traffic, and no safety benefit accrues from differential speed limits for trucks versus cars.

Third, this action will free the State Police to focus on actual safety violations in both cars and trucks, not on an unrealistically low posted speed limit for trucks that almost no one obeys. When posted speed limits like the 55 mph for heavy trucks define 80% to 90% of all drivers as violators, the police have an impossible enforcement task. They can only stop some arbitrary number of trucks at random, and this has nothing to do with traffic safety. To protect and serve is the mission of the State Police, not arbitrary enforcement.

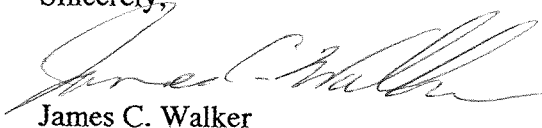
Fourth, I would remind the Committee that the statewide fatality rate in Michigan fell by 17% after three years of the raised posted limits for cars in 1997. This was consistent with studies that show posting speed limits that reflect the actual prevailing speeds of traffic is the safest procedure. Any beliefs that higher speed limits for trucks would be more dangerous are not based on the scientific traffic safety engineering research of the last 60 years. Remember, the fatality rate on freeways is 5 times lower than on other roads.

Lastly, I would like to suggest an amendment to this bill.

It would be an even better bill from the standpoint of overall safety if the heavy truck speed limit were raised to 65 mph or the differential were eliminated altogether, rather than just raising it to 60 mph. There is no demonstrated safety benefit from differential posted speed limits. Again, as in the first point, posting 65 mph for heavy trucks or eliminating the differential limit would have little or no effect on actual travel speeds. It would merely legalize reality, and that tends to be the best and safest procedure for all vehicles.

I attached a list of references I used to prepare this testimony, and some graphs that may be useful to explain the principles to a constituent or a colleague here in Lansing. I would be happy to answer any questions.

Sincerely,



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References used for my testimony:

1. National Cooperative Highway Research Program Report No. 500

This report deals with overall safety strategies and MDOT supports it.

Volume 13: A Guide for Reducing Collisions Involving Heavy Trucks says:

- reducing only truck speeds does not reliably reduce crashes, though it may change the distribution of various crash types.

- research by Garber et al. from 2003 showed that actual vehicle speeds were not affected by differential limits. Introducing or eliminating differential speed limits on rural Interstates did not result in any consistent or significant changes in crash rates, including crash rates for rear end crashes specifically.

2. Effects of Raising and Lowering Speed Limits on Selected Roadway Sections

FHWA-RD-92-084, January 1997, Martin R. Parker and Associates (a Michigan research firm)

(text available online at [www.ibiblio.org/rdu/sl-irrel.html](http://www.ibiblio.org/rdu/sl-irrel.html) )

This study showed that raising or lowering the posted speed limit by up to fifteen (15) mph would change the actual travel speeds by no more than three (3) mph. It also showed that setting the posted limits at the 85<sup>th</sup> percentile speed of free flowing traffic tended to reduce the accident rate in many cases and posting the limit far below the 85<sup>th</sup> percentile speeds did not reduce accidents.

3. An Evaluation of the Michigan 70 MPH Speed Limit (test zones for 70 mph in late 1996)

December 9, 1996 Michigan State University College of Engineering, Dr's. Taylor & Maleck

This report showed 85<sup>th</sup> percentile speed increases of 0.5-0.7 mph and median or 50<sup>th</sup> percentile speed increases of 1.1-1.2 mph after the change for cars from posted 65 mph to 70 mph on rural freeways.

4. Comparison of Speed Zoning Procedures and Their Effectiveness

MDOT Contract No. 89-1204, September 1992, Martin R. Parker and Associates

This report concluded that posting speed limits in the region of the 85<sup>th</sup> percentile speed minimizes accident involvements and provides acceptable driver compliance. No evidence is available to suggest other factors in setting speed limits would provide additional safety or compliance benefits.

5. Michigan statewide fatality rate data from Michigan State Police & Office of Highway Safety Planning

Year	Deaths per 100 million vehicle miles traveled	Special notes
1995	1.79	Last year of posted 65 on all rural freeways and 55 on urban freeways
1996	1.71	Test zones on some rural freeways, reposted to 70 mph (from 65)
1997	1.62	All rural freeways posted 70 and most urban ones posted at 65 or 70
1998	1.49	
1999	1.49	After 3 years of higher posted limits, fatality rate 17% lower than 1995
2000	1.46	
2001	1.38	
2002	1.30	
2003	1.28	
2004	1.14	Current fatality rate on freeways is 0.5/100 million vehicle miles

6. The Effect of Posted Speed Limits on Accident Rates; Should the Speed Limits be Increased on the Interstate Highways, SAE Technical Paper, George Z. Libertiny, Ford Motor Company (safety dept.)

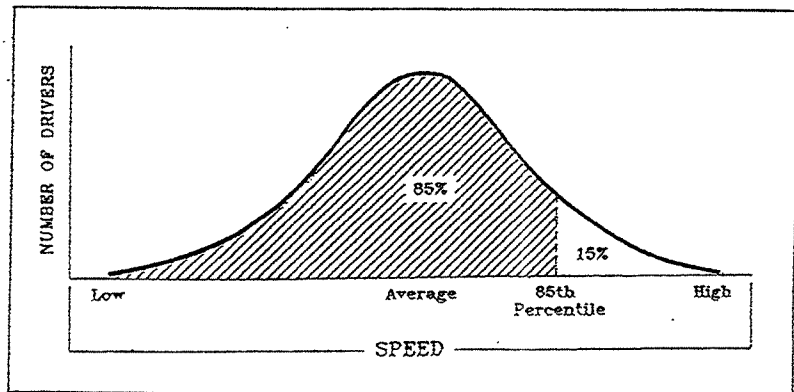
This report urged Interstate limits of 75 to 80 mph with no truck differential suggested, to reduce serious injuries from traffic accidents by diverting more traffic to Interstates which have much lower accident rates.

7. Synthesis of Speed Zoning Practice. FHWA Report No. FHWA/RD-85/096, July, 1985

This report supports posted speed limits that reflect the speed of most drivers as being the safest. It showed the drivers with the lowest accident rate are those near the 85<sup>th</sup> percentile speed and setting posted limits too low can increase accident frequency.

## 85th Percentile Speed

The 85th percentile speed is the speed at or below which 85 percent of drivers are operating their vehicles. Researchers generally perform spot speed studies to obtain reliable estimates of 85th percentile speeds. In these studies, a speed measurement location is identified on a highway, and speeds are measured for an adequate sample of free-flowing vehicles (typically 100–125). The term “free-flowing” means that drivers are not impeded by other vehicles and, therefore, are assumed to be operating at their desired speed at the measurement location. As illustrated in Figure 1, speeds recorded at a given location typically fit a normal distribution (i.e., bell-shaped curve). A variety of equipment may be used to measure speeds, including radar speed meters, laser speed meters, and other devices that use on-pavement sensors to measure the time it takes vehicles to travel a known distance.



**Figure 1.** Normal Distribution of Speeds. The 85th percentile speed is the speed at or below which 85 percent of drivers are operating.

A Federal Highway Administration (FHWA) report [Ref. 7] states: “Traffic officials generally agree that speed limits should reflect the speed of most drivers”. In other words, the drivers know best what is the proper speed to travel on a particular road. Nevertheless, for political and financial reasons, speed limits often are set at significantly lower speeds than that which most motorists consider proper.

As the FHWA report states [Ref. 7]: “Speed zoning incorrectly used on the streets and highways can lead to driver non-compliance with speed limits”. This in turn increases the speed differential between the vehicles. It is well established that drivers who travel appreciably slower or faster than the 85 percentile traffic speed have a higher accident involvement rate than those drivers whose speed is close to the 85 percentile speed, as shown in Figure 1. Thus speed limits set too low can increase the frequency of accidents.

